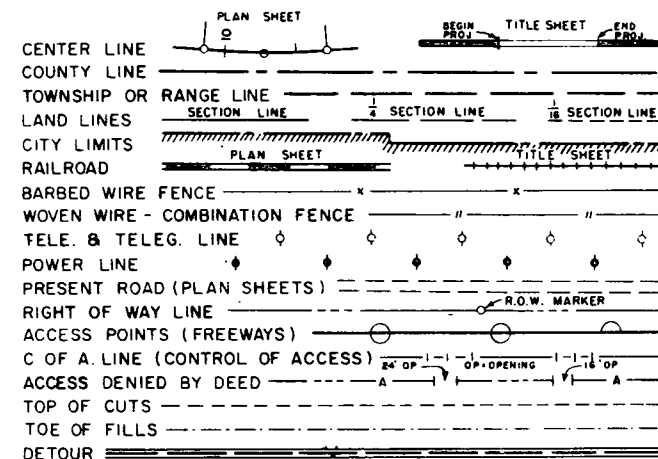


DEPARTMENT OF HIGHWAYS STATE OF COLORADO

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. S 0052 (2) STATE HIGHWAY NO. 24 ADAMS COUNTY

CONVENTIONAL SIGNS



INDEX OF SHEETS

SHEET NO.

1. Sketch Map, Title Page and Tabulation of Length & Design.
2. Typical Section and General Notes.
- 3-5. Summary of Approximate Quantities.
6. Structure Quantities.
7. Surfacing Plan & Tabulation of: Delineators, Shoulder Roll & Plant Mixed Asphaltic Ditch Paving.
8. Fencing Tabulation & Details of: Plant Mixed Asphaltic Ditch Paving & Concrete Retaining Wall.
- 9-15. Details of Bridge Sta. 115+.
16. Details of Concrete Pavement Bridge Approach Slab.
17. Alignment Plan & Profile.
18. Summary of Earthwork Quantities.
- 19-24. Cross Sections

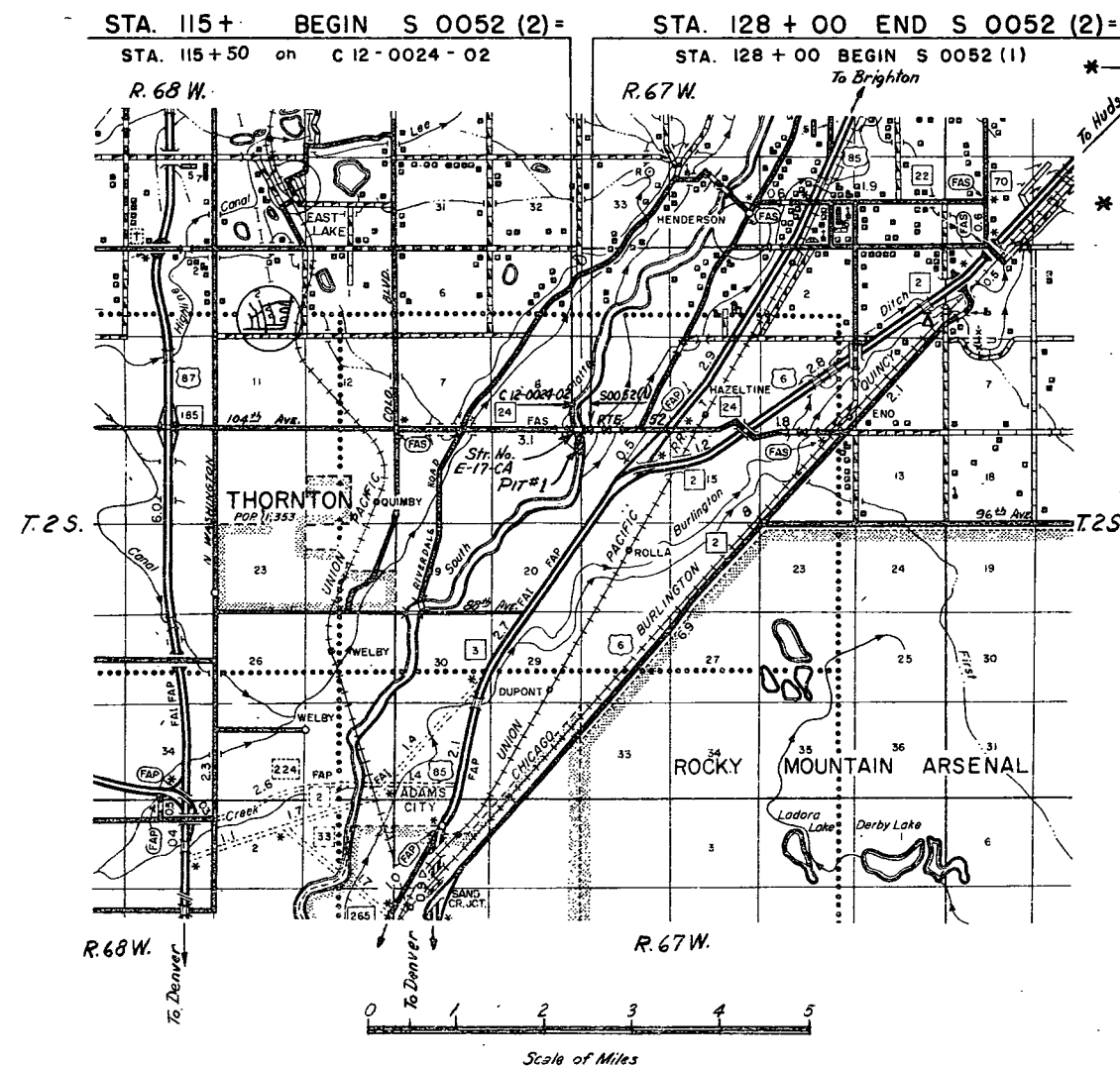
SCALES OF ORIGINAL DRAWINGS

ON PLAN, 1 IN. = 100 FT.
 ON PROFILE, 1 IN. = 100 FT. HORIZONTAL
 1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

TABULATION OF LENGTH & DESIGN DATA

STATION TO STATION	ROADWAY	BRIDGE	LOADING
115+50 BEGIN S0052(2)= 115+50 on C12-0024-02	8.0		
115+58 End C12-0024-02	12.0		
115+70:0 Bridge No. E-17-CA		244.8	HS-20-44
118+14.8	985.2		
128+00 END S0052(2)= 128+00 Begin S0052(1)			
Total	1,005.2'	244.8	
SUMMARY			
	LIN. FT.	MILES	
Roadway	1,005.2	0.191	✓
Bridge	244.8	0.046	✓
Total (Net and Gross Length)	1,250.0	0.237	✓
DESIGN DATA			
Maximum Degree of Curve	Tangent		
Maximum Grade	1.78%		
Minimum S.S.D. (Horizontal)	Tangent		
Minimum S.S.D. (Vertical)	495'		
Maximum Design Speed	60 M.P.H.		



- M-2-A. Approach Roads, Flaring, Cut Slope Treatment, Bridge & Crest Widening.
- M-5-A. Letters and Figures for Structure Numbers.
- M-6-B. Construction Traffic Signs. [2 Sheets]
- M-6CA. Identification Signs.
- M-13A. Ditch Types.
- M-16-A. Backfill Around Structures.
- M-45-A. Culvert Pipe.
- M-75-A. Metal Plate Guard Fence.
- M-76-A. Wire Fences and Gates. [2 Sheets]
- M-81-A. Marker Posts and Bench Marks.
- M-84-A. Curbs and Gutters.
- M-192-AA. Delineators [2 Sheets]
- M-52-A. Reinforced Concrete Pipe

2-3-64
 11-17-64
 1-31-64
 8-24-64
 6-26-64
 2-3-64
 1-31-64
 4-29-64
 12-9-64
 9-24-64
 1-31-64
 8-24-64
 10-27-64
 2-3-64

SEE SPECIAL PROVISIONS FOR
 NOTICE TO BIDDERS

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO

APPROVED: *[Signature]* 12-14-64
 CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS

APPROVED: _____ DATE _____
 DIVISION ENGINEER

J.L.C.

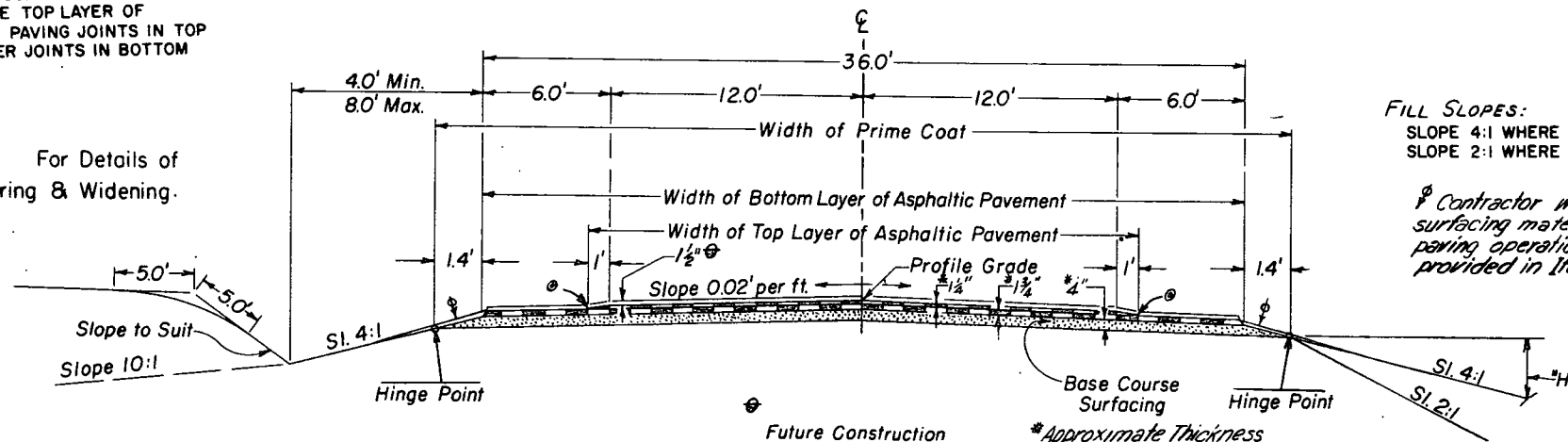
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	50052 (2)	2	

TYPICAL SECTION

NOTE

BOTTOM LAYER OF BITUMINOUS SURFACING SHALL BE COMPLETED FOR FULL WIDTH BEFORE TOP LAYER OF BITUMINOUS SURFACING IS PLACED. PAVING JOINTS IN TOP LAYER WILL OVERLAP MIN. 1 FT. OVER JOINTS IN BOTTOM LAYER.

Note
See Standards For Details of
Cut Slope Treatment, Flaring & Widening.



FILL SLOPES:
SLOPE 4:1 WHERE "H" IS 3' OR LESS
SLOPE 2:1 WHERE "H" IS OVER 3'

‡ Contractor will be required to blade additional surfacing material to this line after completion of paving operation. Material to be paid for as provided in Item 26.

UNCL. EXCAVATION BELOW 4:1 SLOPE AND/OR 10:1 SLOPE WILL NOT BE PERMITTED.

THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE AND/OR ENTRANCE TO DRAINAGE STRUCTURES.

APPROXIMATE 7" COMPACTED THICKNESS OF ASPHALTIC PAVEMENT AND BASE COURSE SURFACING SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING RATES PER 100 LIN. FT. OF ROADWAY:

ASPHALTIC PAVEMENT	TOP LAYER	19 TONS
	BOTTOM LAYER	39 TONS
BASE COURSE		84 TONS

GENERAL NOTES

THIS PROJECT IS TO BE CONSTRUCTED IN CONFORMITY WITH THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS, ADOPTED JANUARY 1, 1958.

'ALL QUANTITIES ON PRELIMINARY PLANS ARE TO BE CONSIDERED APPROXIMATE ONLY.

APPLICATION METHODS, FOR LIQUID ASPHALTIC ROAD MATERIAL, WHICH RESULT IN THE DISCOLORATION OF CONCRETE PAVEMENT, CURBS OR GUTTERS WILL NOT BE PERMITTED.

FOR PRELIMINARY PLAN QUANTITIES OF ASPHALTIC ROAD MATERIALS
THE FOLLOWING RATES OF APPLICATION WERE USED

PRIME COAT @ 0.40 GALS. PER SQ. YD.

TACK COAT @ 0.05 GALS. PER SQ. YD.

RATE OF APPLICATION AND GRADE OF ASPHALTIC MATERIAL SHALL BE AS DETERMINED BY THE ENGINEER AT TIME OF APPLICATION.

ALL POLES ENCROACHING ON CONSTRUCTION ARE TO BE MOVED BY THE OWNERS.

THICKNESS OF SURFACING AND ASPHALTIC PAVEMENT MATERIALS AS SHOWN ON PLANS IS APPROXIMATE ONLY. THESE MATERIALS ARE TO BE PLACED ON THE BASIS OF TONNAGES SHOWN ON PLANS.

All side approach roads to the project shall be primed and paved with 1 1/2" of asphaltic surfacing to a distance out from edge of asphaltic surfacing as follows.

Field approaches - 4 ft.

All other approaches - 50 ft. or to the R.O.W. Line, whichever is less.

All Guard Posts interfering with construction will be removed by State Forces.

SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	S0052(2)	3	

SPECIFICATION ITEM NO.	ITEM	UNIT	ROADWAY			BRIDGE			S0052(2) PROJECT TOTALS			S0046(4) PROJECT TOTAL			COMBINED PROJECT TOTAL			
10	Clearing and Grubbing Entire Project	Lump Sum	•						•			•			•			
11	Removal of Bridges	Each				1			1			2			3			
11	Removal of Structures	Each	3						3			6			9			
11	Reset Mail Box Structures	Each	2						2			5			7			
11	Removing Concrete Pavement	Sq. Yd.										190			190			
12	Removing Guard Fence	Lin. Ft.										342			342			
12	Removing Fence	Lin. Ft.	1,000						1,000			4,600			5,600			
12	Removing and Rebuilding Fence	Lin. Ft.	70						70						70			
13	Unclassified Excavation (Embankment)	Cu. Yd.	5,000						5,000			29,000			34,000			
13	Unclassified Ditch Excavation	Cu. Yd.	50						50			100			150			
14	Unclassified Structural Excavation - Miscellaneous	Cu. Yd.	180						180			80			260			
14	Unclassified Structural Excavation - Bridges	Cu. Yd.				160			160			230			390			
16	Structure Backfill (Class X)	Cu. Yd.	60			40			100			160			260			
17	Wetting	M. Gal.	200						200			1,010			1,210			
21	Soil Sterilant	Sq. Yd.										420			420			
26	Gravel or Crushed Rock Surfacing (Grading C)	Ton	1,200						1,200			4,500			5,700			
29	Asphalt (85-100 Penetration) (Tack)	Ton	1						1			10			11			
30	Asphaltic Road Material MC (Prime)	Gal.	1,900						1,900			8,400			10,300			
32	Plant Mixed Asphaltic Surfacing	Ton	600						600			2,630			3,230			
32	Plant Mixed Asphaltic Shoulder Roll	Ton	20						20			30			50			
32	Plant Mixed Asphaltic Ditch Paving	Ton	5						5			100			105			
37	Concrete Pavement (10" Thick)	Sq. Yd.	134						134			328			460			

SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	COLORADO	SO052(2)	4	

[illegible]

④ Rev. 1-28-65 ~ Add R.O.W. ~ J.L.C.

[illegible]

FED. ROAD REGION NO.	DIVISION	PROJECT NUMBER	SHEET NO.
9	COLO.	50052 (2)	6

LOCATION	MISCELLANEOUS	REMOVAL OF STRUCTURES	EXCAVATION			UNCLASSIFIED STRUCTURAL EXCAVATION	STRUCTURE BACKFILL		GRAVEL OR CRUSHED ROCK SURFACING	PLANT MIXED ASPHALTIC SURFACING	CONCRETE		REINFORCING STEEL	HEIGHT OF COVER	CULVERT PIPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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* Included in Roadway Quantities.
 Ø Included in Surfacing Plan

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	S 0052 (2)	7	

DELINEATORS

STATION	SPACING	TYPE I		TYPE III	
		EACH		EACH	
115+68	Bridge	5		1	
118+17	Bridge	5		1	
TOTALS		10		2	

SHOULDER ROLL & PLANT MIXED ASPHALTIC DITCH PAVING

STATION	SIDE	*SHOULDER ROLL		ASPHALTIC DITCH PAVING	
		LIN. FT.		TON	
118+15 to 118+25	Lt.	10			
118+25	Lt.			1	
118+50 to 122+50	Lt.	400			
122+50	Lt.			1	
118+35 to 119+90	Rt.	155			
119+90	Rt.			1	
120+10 to 124+00	Rt.	390			
124+00	Rt.			1	
TOTALS		955		4	

* 955 Lin. Ft. @ .015 Tons Per Ft. = 14.3 Tons of Plant Mix.

* Details on Sheet No. 8.

SURFACING PLAN

The source of surfacing for this project is undesignated.

Estimated quantities involved in these operations are listed below.

Alteration of the Surfacing Plan as here outlined will be allowed only on written permission from the Department.

STATION To STATION	SOURCE	TONS USED				
		BASE COURSE	PLANT MIX			
			BOTTOM COURSE		TOP COURSE	
118+34.8 - 128+00	UNDESIGNATED MIN. "R" = 78	811		376		183
Estimated For:						
Approach to Project (115+)		8		4		2
Correcting Irregularities.		82		—		—
Blading Against edge		60		—		—
of Shoulder Paving.		—		—		2
Bridge Widening.		171		—		32
Structure Quantities.						
TOTALS		1,132		380		219

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	S0052(2)	8	

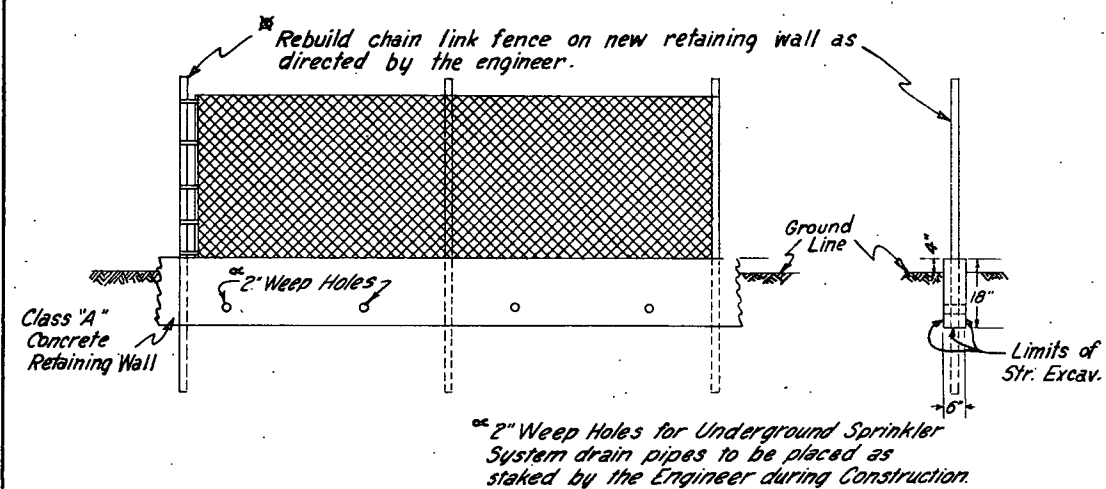
FENCING TABULATION

STA. TO STA.	SIDE	REMOVE FENCE LIN. FT.	REMOVE & REBUILD FENCE LIN. FT.	BUILD B. W. FENCE LIN. FT.	BUILD COMB. FENCE LIN. FT.	B. W. GATES EACH	DRIVE WAY GATES EACH
118+20 to 124+50	Lt.	670					
124+70 to 125+20	Lt.	75					
125+45 to 127+00	Lt.	215					
125+45 to 126+05	Lt.		65				
118+20 to 122+80	Lt.			475			
122+80 to 125+45	Lt.				190		
126+05 to 127+00	Lt.				65		
118+35	Lt.					/	
118+75	Rt.					/	
120+00	Rt.					/	
122+80	Lt.						/
123+30	Lt.						/
123+83	Lt.						/
124+58	Lt.						/
125+35	Lt.						/
126+35	Lt.						/
126+94	Lt.						/
TOTALS		960	65	475	255		7

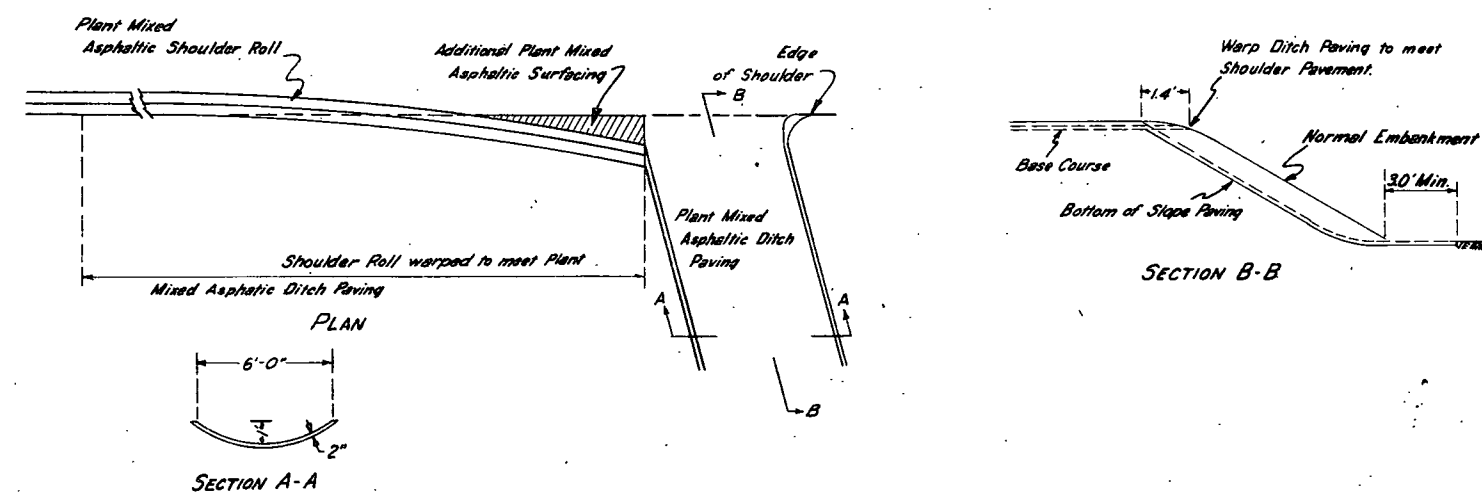
It is estimated that 6 Corner & Line Brace Posts and 16 End Posts, will be required.

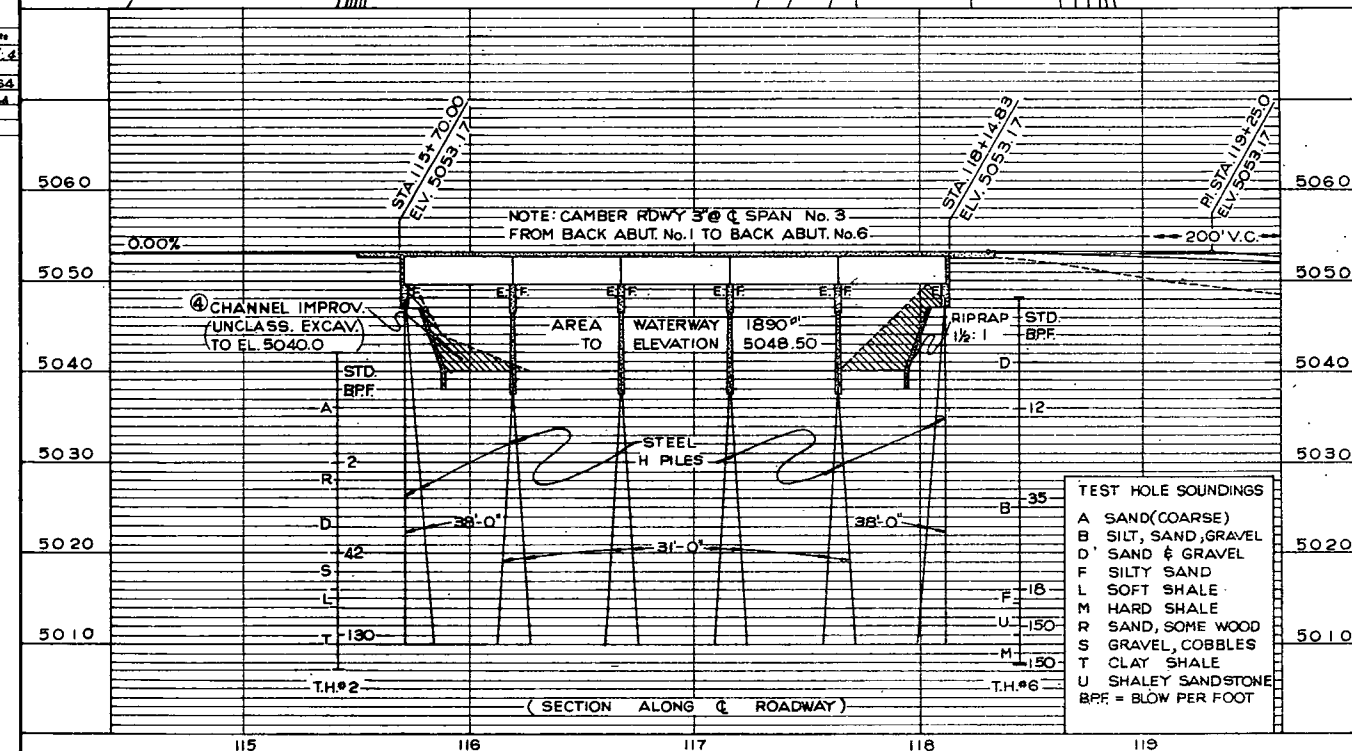
* Chain Link Fence (See Detail this Sheet.)

DETAILS OF CONCRETE RETAINING WALL (STA. 125+ TO STA. 126+ Lt.)



DETAILS OF PLANT MIXED ASPHALTIC DITCH PAVING (FOR RUNDOWNS)





STRUCTURE NO. E-17-CA

SUMMARY OF QUANTITIES										
ITEM	DESCRIPTION	UNIT	SUPER- STRUCTURE	ABUT. No. 1	PIER No. 2	PIER No. 3	PIER No. 4	PIER No. 5	ABUT. No. 6	TOTAL
14	UNCLASS. STRUCT. EXCAV. - BRIDGE	CU.YD.		50	15	15	15	15	50	160
16	STRUCTURE BACKFILL (CLASS X)	CU.YD.		6	7	7	7	7	6	40
46	*CLASS "A" CONCRETE	CU.YD.	241.4	16.8	25.5	25.5	25.5	25.5	16.8	377
46	PRESTRESSED CONC. BEAM (47'-0")	EACH	25							25
47	REINFORCING STEEL	Lb.	49262	923	1333	1333	1333	1333	923	56440
48	STRUCTURAL STEEL(INCL. 1/2" ± FOR PAINT)	Lb.	700	275	805	805	805	805	275	4470
48	STRUCTURAL STEEL(GALV.)	Lb.	6412							6412
11	REMOVAL OF BRIDGE	EACH								1
61	STEEL PILING (8 BP 36)	LN.FT.		190	186	186	186	186	190	1124
67	RIPRAP (1'-6" THICK)	CU.YD.		40					40	80
75	METAL PLATE GUARD RAIL	LN.FT.	485							485
79	EXPANSION JOINT SEALER	UN.FT.		30					30	60
80	SHEET COPPER (32 OZ)	Lb.	30							30
89	DRAIN PIPE (4" Ø x 1'-6", CONC. FLOOR)	EACH	20							20
2	1/2" EXP'N. JOINT MAT'L. (AASHOMH53-54 TYPE I)	SQ.FT.	100	4					4	108
2	16 GA GALV SHEET METAL	SQ.FT.	45							45

① DOES NOT INCL. GALV. NO PERCENTAGE SHALL BE ADDED TO WEIGHT OF BARE METAL FOR SPELTER COATINGS.
② TO BE INCLUDED IN BID PRICE FOR ITEM 46 CLASS "A" CONC.

③ QUANTITIES FOR ONE PRESTRESSED BEAM (25 REQ'D.)	
CLASS "P" CONCRETE	4.7 CU.Y.
REINFORCING STEEL	731 Lb.
STRUCTURAL STEEL	110 Lb.

③ NOT INCLUDED IN SUMMARY OF QUANTITIES.

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A".

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

IF 3" STEAMER TIES ARE USED, THE TIES SHALL BE PLACED AT A MINIMUM OF 12" FROM THE SURFACE. STEAMER TIES FOR BARS NEAR TOPS OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS, AND 17 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS SHALL BE PLACED AT A MINIMUM OF 12" FROM THE TOP AND BOTTOM OF THE BARS.

DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTERLINE OF THE MEMBER.

ALL FOOTINGS SHALL BE CONCRETE.

SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA, AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REINFORCING STEEL SHALL BE USED.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-EXCAVATION.

FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL: SEE STANDARD M-H-A-101, AND FOR DETAILS OF FOUNDATION CONSTRUCTION: SEE STANDARD M-H-A-102. TWO SHOWN RECEIVE CLASS "1" SURFACE FINISH.

ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF ZINC CHROMATE, AND TWO FIELD COATS OF AN EQUAL THICKNESS WITH THE SAME PAINT.

ALL RIVETS SHALL BE 3/4" INCH DIAMETER UNLESS OTHERWISE NOTED.

HIGH TENSILE BOLT SHALL BE 1/2" INCH DIAMETER UNLESS OTHERWISE NOTED. THE CONTRACTORS OPTION: HIGH TENSILE BOLT SHALL BE FURNISHED IN THE AMOUNT OF FIVE PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

FOR CONNECTIONS OF STEEL TO CONCRETE, THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.

FOR WELDING GUIDELINES ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE FIELD WELDS. ALL GIRDERS SHALL BE WELDED TO THE CONCRETE.

WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE SPECIALLY RADIOGRAPHED AND APPROVED BY THE ENGINEER.

WHEN TREATED TUMBLER PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.

ALL MATERIAL NOT OTHERWISE NOTED SHALL BE ASTM A-36-62T

LOADING DATA
LIVE LOAD - A. A. S. H. O. HS-20-44
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1/2 INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

A.A.S.H.O. UNIT STRESSES, EXCEPT AS NOTED.
 Reinforcing Steel $f_s = 20000$ lbs. per sq. in. (Str. A36 Steel)
 Structural Steel $f_s = 18000$ lbs. per sq. in. (A7 Steel)
 Concrete $f_c = 3200$ lbs. per sq. in.
 $n = 10$

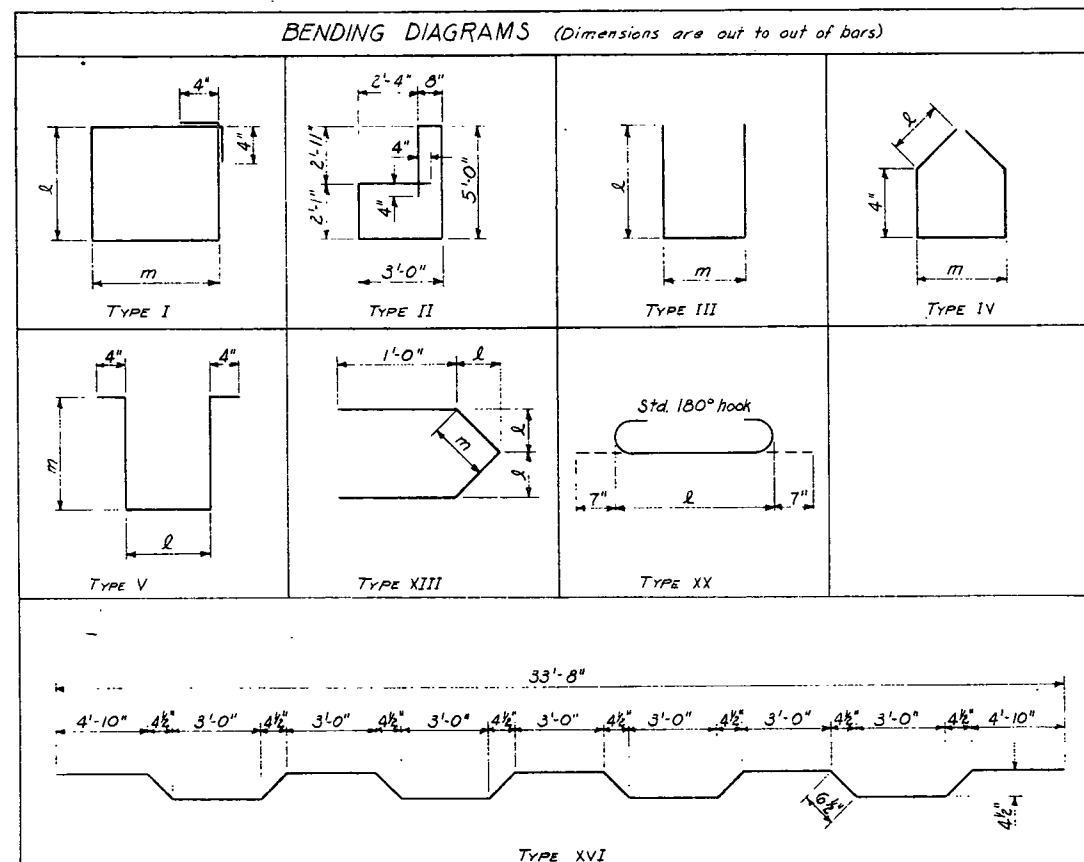
COLORADO
DEPARTMENT OF HIGHWAYS
5 SPANS @ 47'-0" CONC. SLAB.
PRESTRESSED GIRDBERS. 30'-0"
R'D'W'Y. 2'-0" CURBS. NO. SKEW.
.GENERAL LAYOUT & NOTES
SUMMARY OF QUANTITIES.

Across SOUTH PLATTE RIVER
Sta. 115+70.00 to 118+14.83
Near HENDERSON Sec. 16 T. 2 S. R. 67 N.

Designed by _____
Made by _____
Checked by _____

Approved by Edgewood
Bridge Engineer
Date: Nov. 16, 1964

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S0052(2)	10	



BAR LIST - SUPERSTRUCTURE						
MARK	SIZE	N ^o REQ'D	LENGTH	TYPE	DIMENSIONS	
					l	m
405	1/2" Ø	360	5'-0"	V	6"	1'-11"
406	1/2" Ø	120	5'-6"	Str.		
407	1/2" Ø	494	4'-4"	III	1'-4"	1'-8"
408	1/2" Ø	160	4'-8"	I	1'-5"	7"
503	3/8" Ø	242	35'-0"	XVI		
504	3/8" Ø	490	33'-8"	Str.		
505	3/8" Ø	148	48'-9"	Str.		
506	3/8" Ø	222	48'-1"	Str.		
601	3/4" Ø	120	5'-6"	Str.		
BAR SUMMARY						
5,347 Lin. Ft. 1/2" Ø @ 0.668 P.L.F. = 3,572 Lb.						
42,856 Lin. Ft. 3/8" Ø @ 1.043 P.L.F. = 44,699 Lb.						
660 Lin. Ft. 3/4" Ø @ 1.502 P.L.F. = 991 Lb.						
Total = 49,262 Lb.						

BAR LIST PIER N ^o 2 (3,4,5 Similar)						
MARK	SIZE	N ^o REQ'D	LENGTH	TYPE	DIMENSIONS	
					l	m
416	1/2" Ø	27	11'-4"	I	3'-0"	2'-4"
417	1/2" Ø	14	20'-8"	Str.		
418	1/2" Ø	32	10'-0"	Str.		
419	1/2" Ø		3'-9"		7 1/2"	10 1/2"
70		2 ea.	by 2 3/4" to	XIII	by 1" to	by 1 3/8" to
425	1/2" Ø		5'-1 1/2"		1'-1 1/2"	1'-6 3/4"
426	1/2" Ø	4	29'-8"	Str.		
510	3/8" Ø	3	15'-10"	Str.		
1001	1 1/4" Ø	16	8'-0"	Str.		
BAR SUMMARY						
1,096 Lin. Ft. 1/2" Ø @ 0.668 P.L.F. = 732 Lb.						
48 Lin. Ft. 3/8" Ø @ 1.043 P.L.F. = 50 Lb.						
120 Lin. Ft. 1 1/4" Ø @ 4.303 P.L.F. = 551 Lb.						
Total = 1333 Lb.						

BAR LIST - ABUT. N ^o 1 (N ^o 6 Similar)						
MARK	SIZE	N ^o REQ'D	LENGTH	TYPE	DIMENSIONS	
					l	m
410	1/2" Ø	26	16'-8"	II		
411	1/2" Ø	6	14'-8"	III	7'-0"	8"
412	1/2" Ø	4	33'-8"	Str.		
413	1/2" Ø	8	3'-8"	Str.		
414	1/2" Ø	20	4'-8"	Str.		
802	1" Ø	2	41'-8"	Str.		
803	1" Ø	2	33'-8"	Str.		
BAR SUMMARY						
779 Lin. Ft. 1/2" Ø @ 0.668 P.L.F. = 520 Lb.						
151 Lin. Ft. 1" Ø @ 2.670 P.L.F. = 403 Lb.						
Total = 923 Lb.						

BAR LIST FOR ONE PRESTRESSED GIRDER*						
MARK	SIZE	N ^o REQ'D	LENGTH	TYPE	DIMENSIONS	
					l	m
401	1/2" Ø	45	7'-8"	V	4"	3'-4"
402	1/2" Ø	2	8'-1"	V	9"	3'-4"
403	1/2" Ø	47	3'-8"	IV	10 1/4"	1'-3 1/2"
404	1/2" Ø	45	2'-5"	IV	6"	9"
501	3/8" Ø	8	3'-10"	XX	2'-8"	
502	3/8" Ø	12	1'-11"	XX	9"	
801	1" Ø	2	46'-0"	Str.		
BAR SUMMARY						
642 Lin. Ft. 1/2" Ø @ 0.668 P.L.F. = 429 Lb.						
54 Lin. Ft. 3/8" Ø @ 1.043 P.L.F. = 56 Lb.						
92 Lin. Ft. 1" Ø @ 2.670 P.L.F. = 246 Lb.						
Total = 731 Lb.						

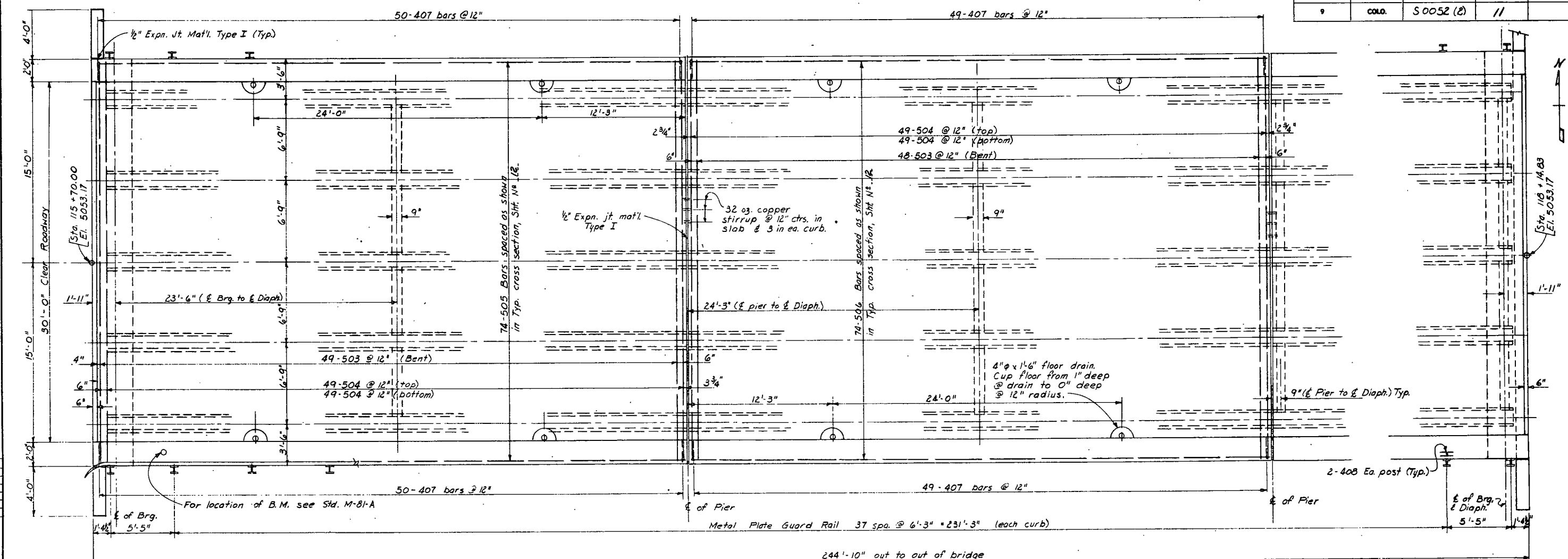
* To be included in the Bid Price of each prestressed girder.
* If girders are prefensioned, add 6 #401 bars to replace 501 & 502 bars.

	Initial	Date
DESIGNED BY	SET	
CHECKED BY		
DRAWN BY	LDP	11/14
CHECKED BY	1001-28M	11-14
TRACED BY		
CHECKED BY		

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
BAR LIST & SUMMARIES
BENDING DIAGRAMS

Across South Platte River
Sta. 115+70.00 to 118+14.83
Near Henderson Sec. 16 T. 2S. R. 67N
Designed by GET
Made by LDP
Checked by
Approved by [Signature]
Bridge Engineer
Date: Nov. 10, 1964

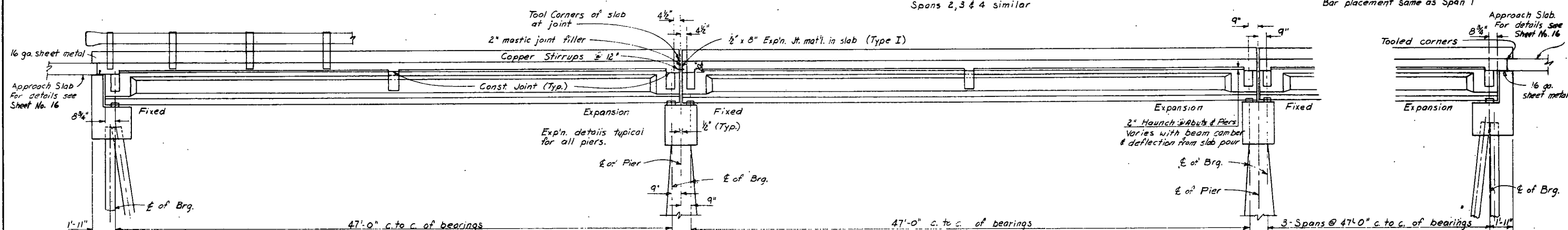
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0052 (2)	11	



SPAN №1

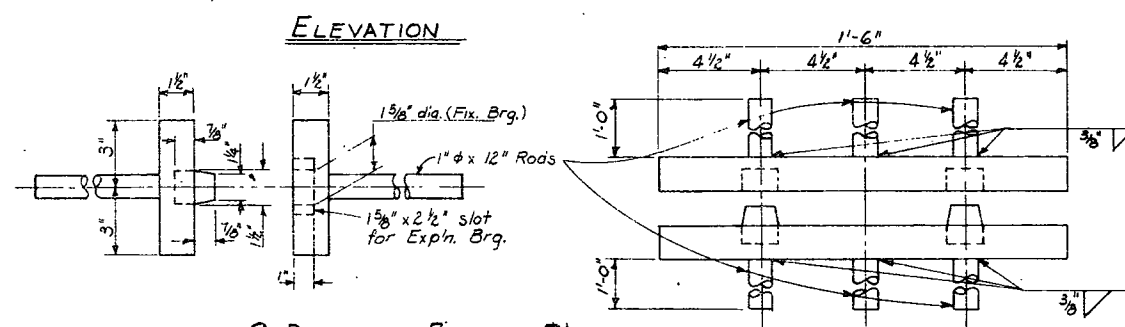
SPAN N°2
Spans 2, 3 & 4 similar

SPAN N° 5
Bar placement same as Span 1



SECTION THRU DIAPHRAGM

① DETAIL OF BEARING P's



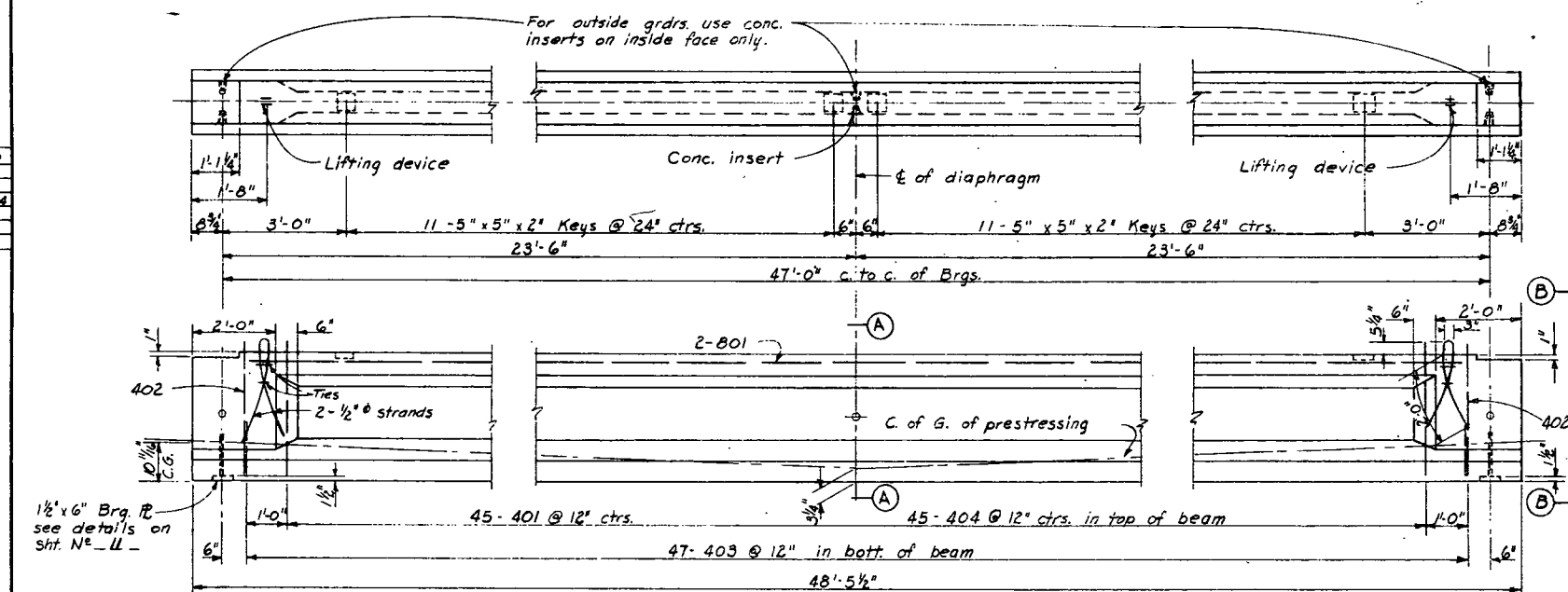
① May Be Made From A7 Steel

STRUCTURE NO. E-17-CA

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
PLAN OF SUPERSTRUCTURE
DETAIL OF BEARINGS

Across South Platte River
Sta. 115+70.00 to 118+14.83
Near Henderson Sec 16 T. 2S R. 67W

Designed by <u>GET</u>	Approved by <u>William Ford</u>
Made by <u>LDP</u>	Bridge Engineer
Checked by	Date: <u>Year 1964</u>



ELEVATION OF GIRDERS

30'-0" Clear Roadway

Profile Grade Slope .020 1/ft.

Slope .020 1/ft.

503

504

505 #506

407

1'-8"

1'-11"

1"

#5 bars

408

407

1" x 6" Key

4" ϕ x 1'-6" Drain

6"

3/4"

1/4" cl.

7/32"

1/4"

2-406

2-601

4-Sps. @ 8 1/2" Typ.

6-405 @ 12" (Typ.)

1" ϕ Rod Thrd. one end 2'-0" long @ end diaph. 2'-6" long @ inter. diaph. Include in item 48.

3/4" chamfer

3/4" Drip Groove

6'-9"

6'-9"

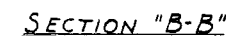
6'-9"

2 Bridge

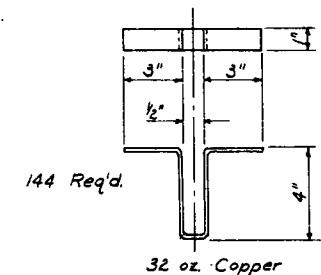
Note:
407 Bars may be placed after slab is poured, but before initial set.

2" haunch @ Abuts. & Piers. Varies with beam camber & deflection from slab pour

Diagram illustrating the Deflection (D.L. DEFLECTION FROM SLAB POUR) of a slab. The deflection is shown as a curved line below the slab, with values at various points: 0", 1/8", 1/4", 5/16", 3/8", 3/8", 3/8", 5/16", 1/4", 1/8", and 0". The total length is 10 spaces @ 4'-8 3/8" = 47'-0".

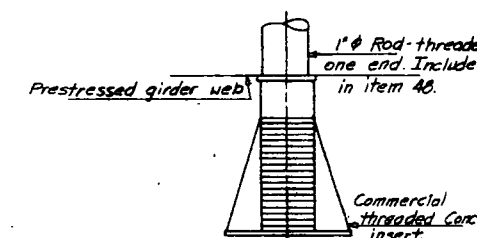


SECTION "A-A"



COPPER STIRRUP

Prestressing Steel consists of
(16) $\frac{1}{2}$ " ϕ wire strands with an
area of 2.30 sq. in. Initial
prestress force 24,700 lbs.
per strand.



INSERTS FOR DIAPHRAGMS

Chamfer exposed corners $\frac{3}{4}$ " unless otherwise noted.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

FINISHED ROADWAY ELEVATIONS
GIRDER DETAILS
SECTION THRU DECK

Across <u>South Platte River</u>	
<u>Sta 115+70.00 to 115+14.83</u>	
Near <u>Henderson</u>	<u>Sec. 16 T. 2S R. 1E</u>
Designed by <u>G.E.T.</u>	Approved by <u>Arthur Smith</u>
Made by <u>LDP</u>	<u>Bridge Engineer</u>
Checked by	Date: <u>Nov. 16, 19</u>

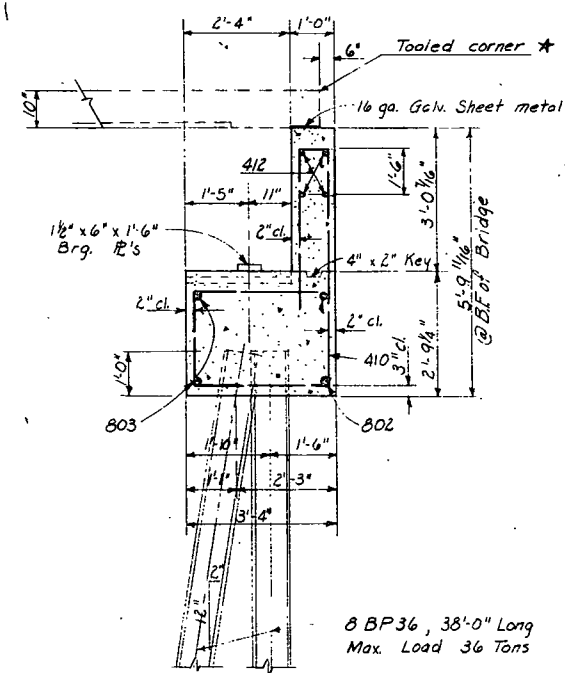
NOTES:

Conc. for the precast girders shall have a cylinder strength of 5000 p.s.i. at 28 days. At time of release of prestress, the conc. shall have a minimum cylinder strength of 4000 psi. High tensile wire strands for prestressing steel shall have a minimum ultimate strength of 250,000 psi, and an elongation at rupture of not less than 3% in 10 inches. After girders are removed from the forms they must be maintained STR in an upright position at all times and must be picked up with lifting devices.

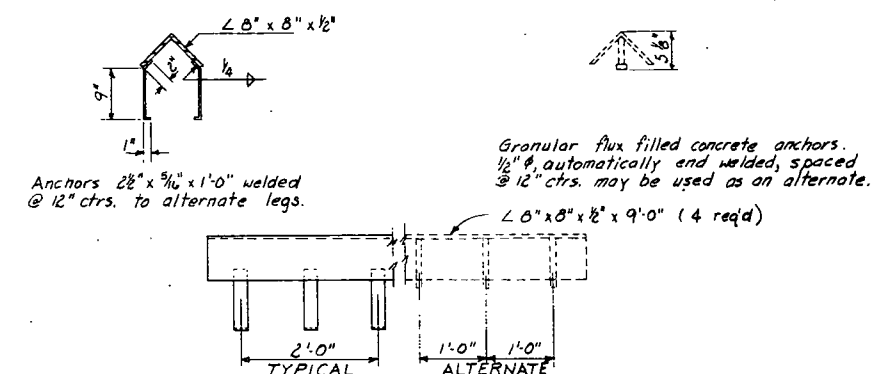
If pretensioned, use 3.#4's as shown. To be included in the cost of each girder. End block may be omitted.

10 _____ F-17-CA

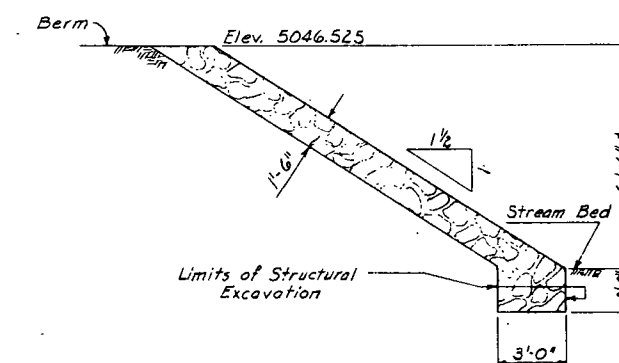
	Initial	Date
DESIGNED BY	LDP	11/64
CHECKED BY		
DRAWN BY	LDP	11/64
CHECKED BY	DCL	11-64
TRACED BY		
CHECKED BY		



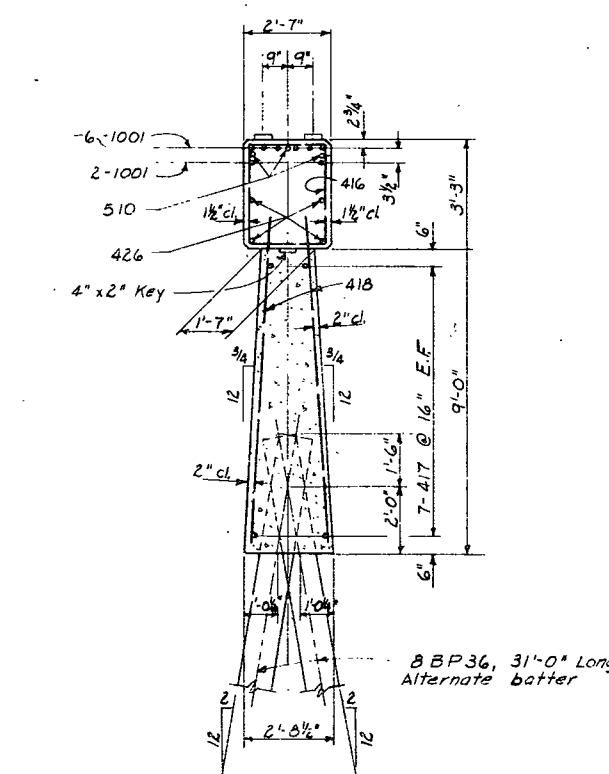
★ Note: For detail of Expn Joint Seal. between abut and appr. slab, see Sheet No. 16



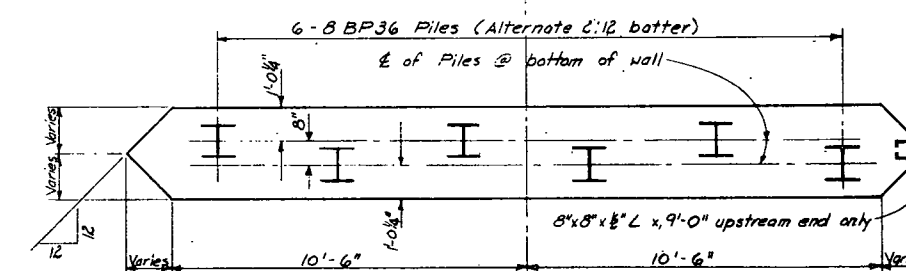
PIER NOSE ANGLE



DETAIL OF RIPRAP



SECTION "G-G"



SECTION "F-F"

ELEVATION TYPICAL PIER

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
SUBSTRUCTURE DETAILS

Across South Platte River
Sta. 115+70.00 to 118+14.89
Near Henderson Sec. 16 T. 2S R. 67N

Designed by <u>GET</u>	Approved by <u>Adkins</u>
Made by <u>LDP</u>	Bridge Engineer
Checked by	Date: <u>Nov. 16, 1964</u>

STRUCTURE NO. E-17-CA



36 Pieces 13'-6" for steel posts
2 Pieces 12'-8" for steel posts
2 Pieces 6'-5" for steel posts



4 Terminal Pieces Req'd.



Note: Aluminum Guard Rail 0.125" thick will be an acceptable equivalent for steel guard rail.

* All posts to be galvanized.



SPLICE BOLT
Post Bolt similar except length.

METAL PLATE GUARD RAIL

COLORADO
DEPARTMENT OF HIGHWAYS
HANDRAIL
DETAILS

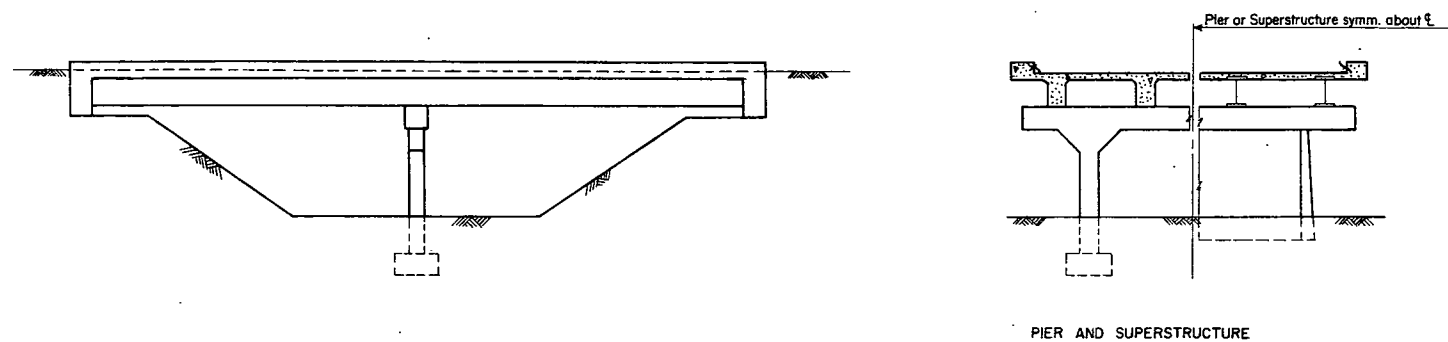
Across South Platte River
Sta. 115 + 74.00 to Sta. 118 + 44.83
Near Henderson Sec. 16 T. 25 R. 67W

Designed by Made by RLS Checked by	Approved by <u>Adrian Balk</u> Bridge Engineer Date: <u>1964</u>
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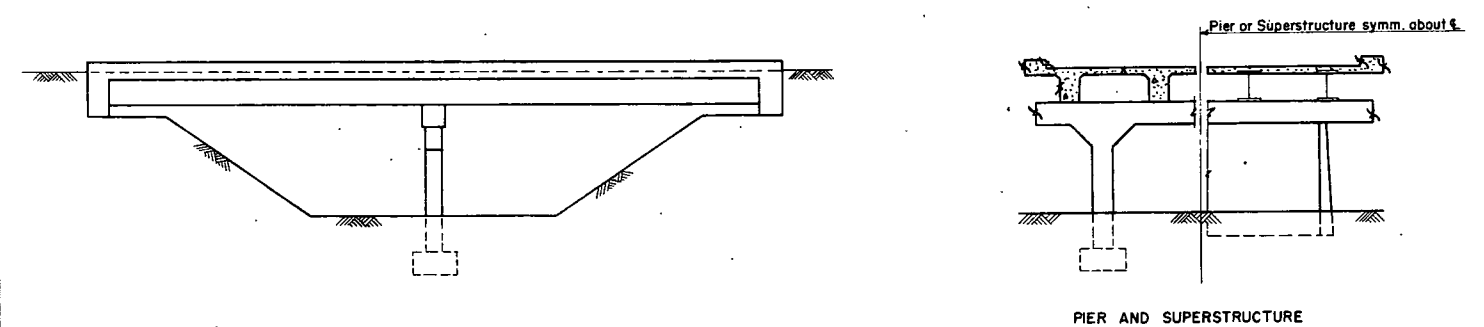
STRUCTURE NO. E-17-CA

REVISIONS

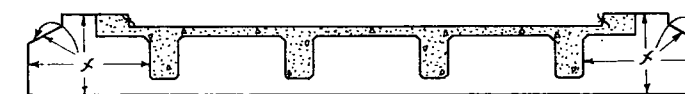
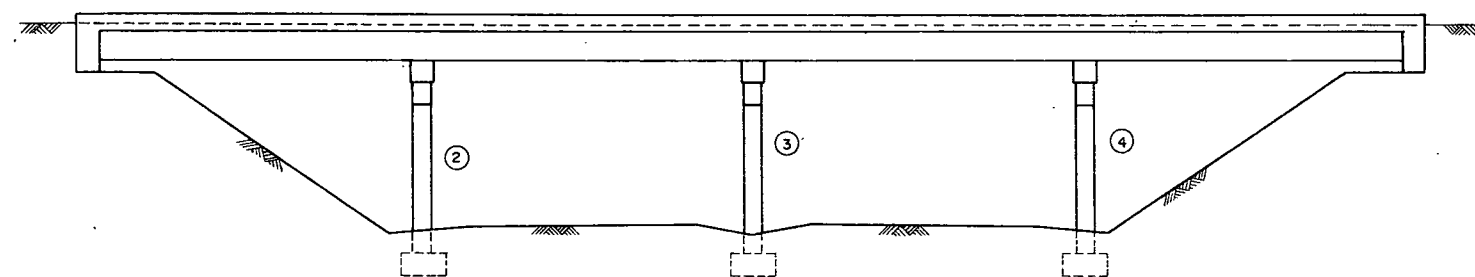
FED. ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	5 0052 (2)	15	



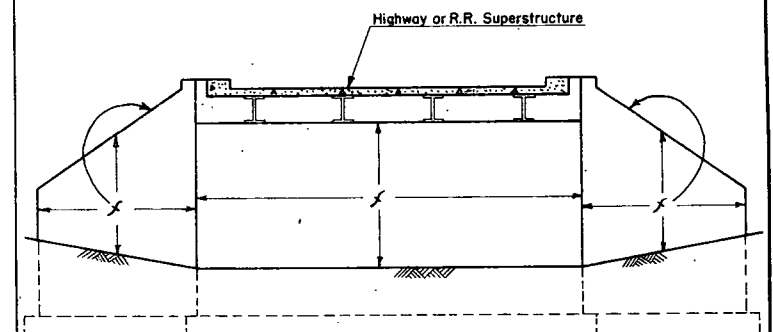
RURAL STREAM CROSSING (E-17-CA)



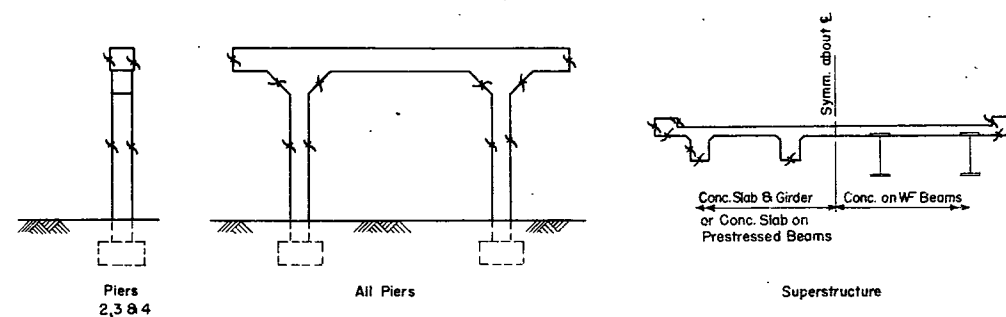
STREAM CROSSING IN OR NEAR URBAN AREA



STUB ABUTMENTS
(Underpass Only)



CANTILEVER ABUTMENTS
(Underpass Only)



UNDERPASS

In case of round columns the whole column shall receive Class "I" finish on all Piers.

COLORADO	
DEPARTMENT OF HIGHWAYS	
DETAILS SHOWING PORTIONS OF STRUCTURE TO RECEIVE CLASS "I" SURFACE FINISH.	
Across <u>So. Platte River</u>	
Sta. <u>Henderson</u>	Sec. <u>T.</u> R. <u>R.</u>
Designed by A.D.N.	Approved by <u>John H. Cook</u>
Made by R.R.A.-J.B.	Bridge Engineer
Checked by	Date: <u>Nov. 16, 1964</u>

STRUCTURE NO. E-17-CA

NOTE:
Alignment and Grades as shown are subject to modification during construction after approval by the Denver Office.
Soil data shown on the plans is obtained from best available testing laboratory information. This information is shown for convenience of the Contractor and the Department does not guarantee the accuracy of these tests. If materials not conforming to the data on plans are encountered during construction, the grading plan shown will be modified where necessary to secure dense, stable embankments.

FED. ROAD REG. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	5 0052 (2)	17	

115+50 to 115+70 ~ Req'd. Bridge Approach Slab with Concrete Combination Curb and Gutter (Variable). Metal Plate Guard Fence (Beam Type) Rt.

115+ ~ Remove Bridge. Req'd Bridge (Details on Sheet 9 thru 15)

118+14.8 to 118+34.8 ~ Req'd Bridge Approach Slab with Concrete Combination Curb and Gutter (Variable). Rt.

118+65 to 118+90 ~ Req'd Metal Plate Guard Fence (Beam Type) Lt.

S.W. 1/4, Sec. 9
T.2 S., R.67 W.

125+ to 126+ ~ Remove Concrete Retaining Wall. Req'd Concrete Retaining Wall Lt. (Details on Sheet 8).

115+ ~ Req'd Approach to Project.
Req'd. Identification Sign (State Furnished and Installed).

STA. 115+50 BEGIN 50052(2) = Sta 115+50 on C 12-0024-02

118+ to 120+ ~ Req'd Road Approach Rt.

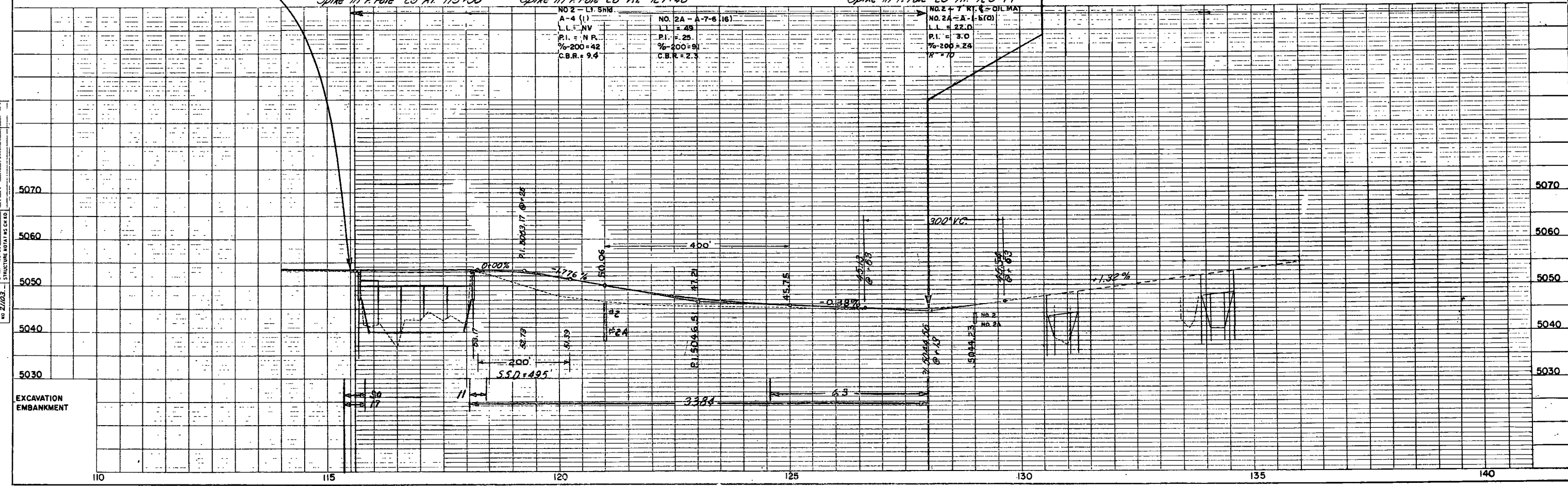
CLEARING & GRUBBING
Willows & light brush

STA. 128+00 END 50052(2) = Sta. 128+00 Begin 50052(1)

BM #10 Elev. 5034.42
Spike in R Pole 25' Rt. 115+50

BM #9 Elev. 5048.44
Spike in R Pole 28' Rt. 121+48

BM #8 Elev. 5046.51
Spike in R Pole 28' Rt. 129+77



DATE	BY	CHECKED	DATE

PLAN

NOTE: BOOK NO. 2/107-1

DATE	BY	CHECKED	DATE

PROFILE

NOTE: BOOK NO. 2/107-1